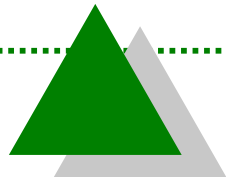


# **Remote Treatment Facility at Argonne West**

**Angela Harvey  
Argonne Area Office**





# **There Is a Clear Need for RTF:**

- ▲ **RH waste must be processed prior to leaving the site.**
- ▲ **HFEF mission cannot be eliminated to complete the waste processing mission.**
- ▲ **STP and RCRA permits require action to disposition this waste**



# The Key Drivers

## ▲ INEEL Site Treatment Plan (STP)

- RTF designated treatment option for MLLW and Mixed TRU at both ANL-W and INEEL

## ▲ RCRA storage permits for the Radioactive Scrap and Waste Facility (RSWF) & the Outdoor Radioactive Storage Facility (ORSA) [formerly RSSF: Radioactive Sodium Storage Facility]

- Permit states that RH waste could be treated at RTF
- Permit expires in January 2004 // New Application scheduled to be submitted next FY



# Characteristics of ANL-W RH Waste

- ▲ More than 300 m<sup>3</sup> of waste
  - » At least 75% not characterized sufficiently to meet transportation requirements.
- ▲ Up to 20,000 R/hr on contact
- ▲ Majority of waste contaminated with sodium.
  - » Reactive
  - » pyrophoric
- ▲ Some waste co-mingled with RCRA metals.

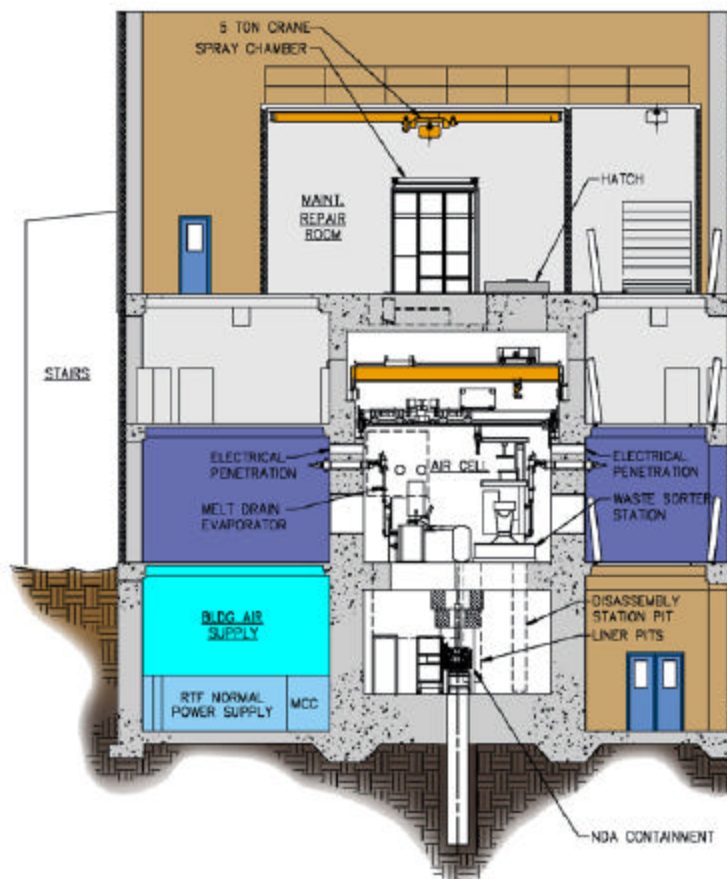


# RTF Mission

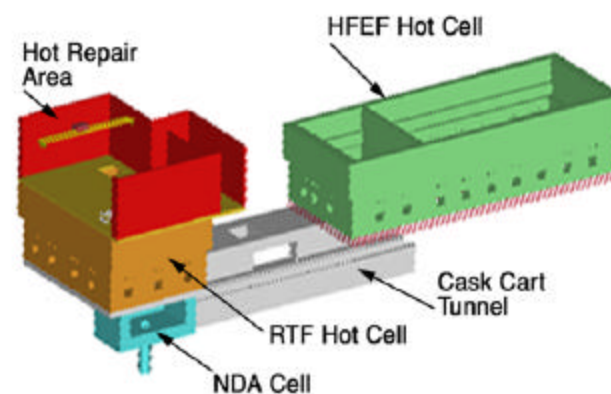
- ▲ **Un-package**
- ▲ **Segregate**
- ▲ **Characterize**
  - » Assay for isotopic content
  - » chemical analysis when required
  - » visual characterization
- ▲ **Remove and treat sodium**
- ▲ **Re-package**
- ▲ **Load for transport**



## RTF Elevation View



## Remote Treatment Facility (RTF)



- ▲ A proposed new Hot Cell Facility
- ▲ Adjacent to the Hot Fuel Examination Facility



# Milestones and Schedules for RTF

\$	<b>Submit Project Management Plan</b>	<b>September 1997</b>	<i>Complete</i>
\$	<b>Identify and Request Funding</b>	<b>June 2000</b>	<i>Complete</i>
\$	<b>Mission Need Approval: Initiate Conceptual Design, CD-0</b>	<b>December 2000</b>	<i>Complete</i>
\$	<b>Baseline Approval: Initiate Preliminary Design, CD-1</b>	<b>December 2003*</b>	
\$	<b>Performance Approval: Initiate Final Design, CD-2</b>	<b>December 2004*</b>	
\$	<b>Construction Start Approval, Part B Issues, CD-3</b>	<b>September 2005</b>	
\$	<b>Operations Begin, CD-4</b>	<b>September 2009</b>	
\$	<b>Submit Backlog Treatment Schedule</b>	<b>June 2010</b>	

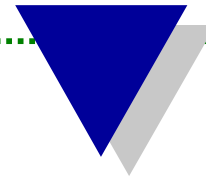
\*Enforceable FY02 mile stone—within 3 year window



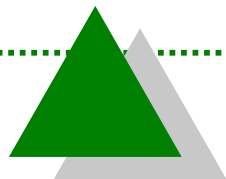
# **FY02 RTF Work Scope**

- ▶ **Resume work in support of NEPA Process**
- ▶ **Initiate and potentially complete the Conceptual Design Report**
- ▶ **Coordinate and assure Complex-wide Integration**
  - » **Initial integration meeting held Nov. 14, 2001**
  - » **Follow-up integration between ANL and INEEL ongoing**



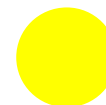
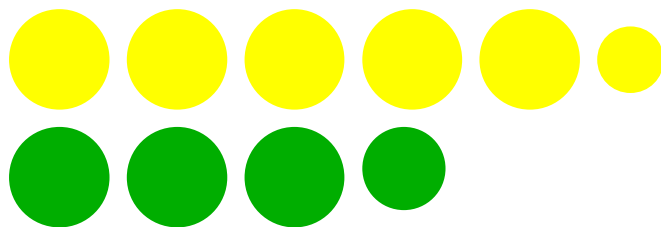


# Background





# RSWF RH Waste Storage Categories

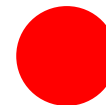
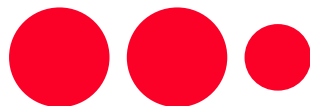


LLW



MLLW

TRU/aLLW



MTRU



SCW



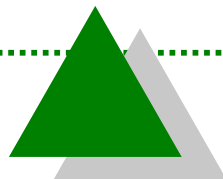
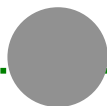
SNF



Co-mingled all categories



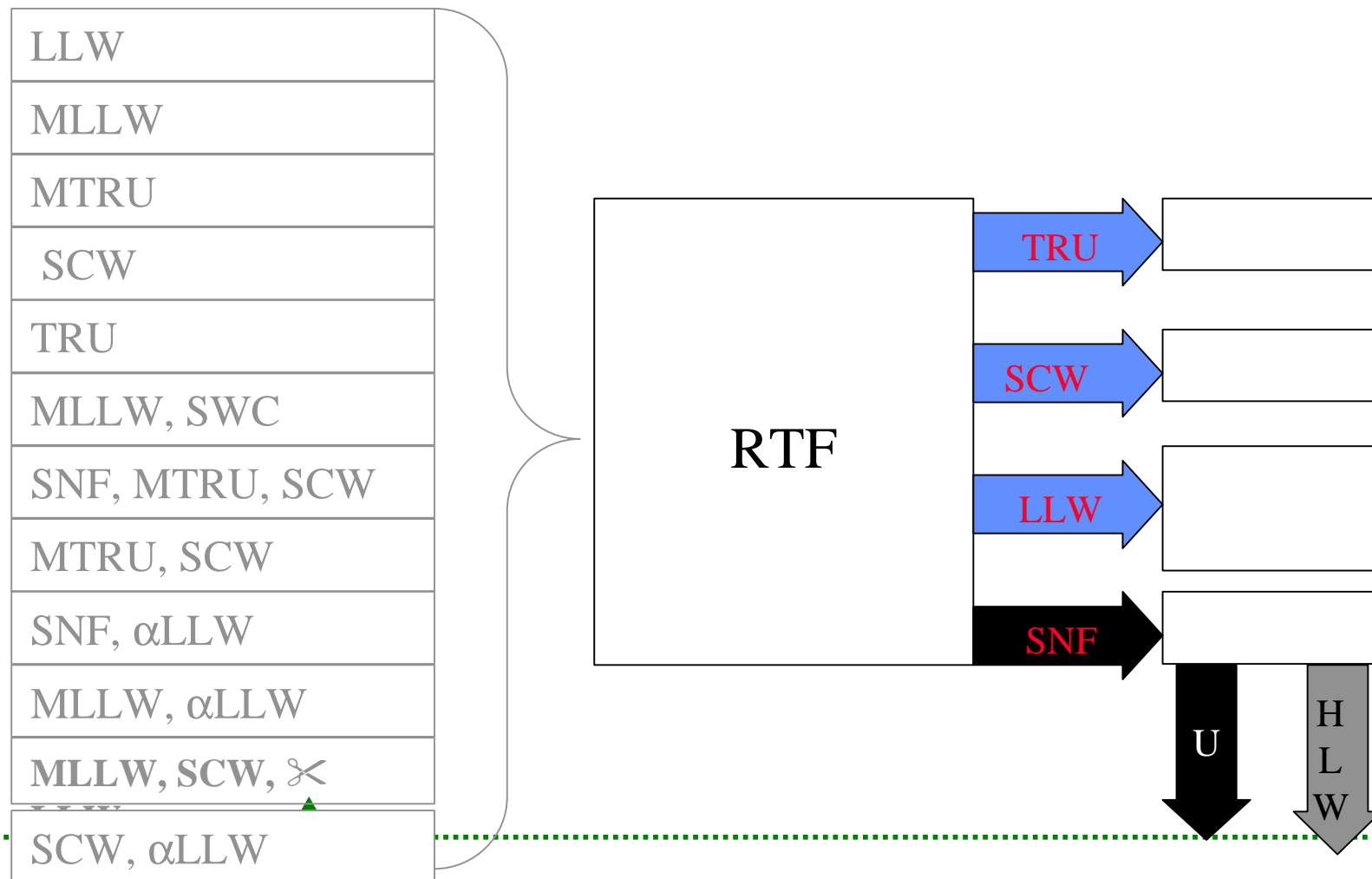
Empty-390



Each large circle represents 50 liners



# RH Waste Processing and Disposition





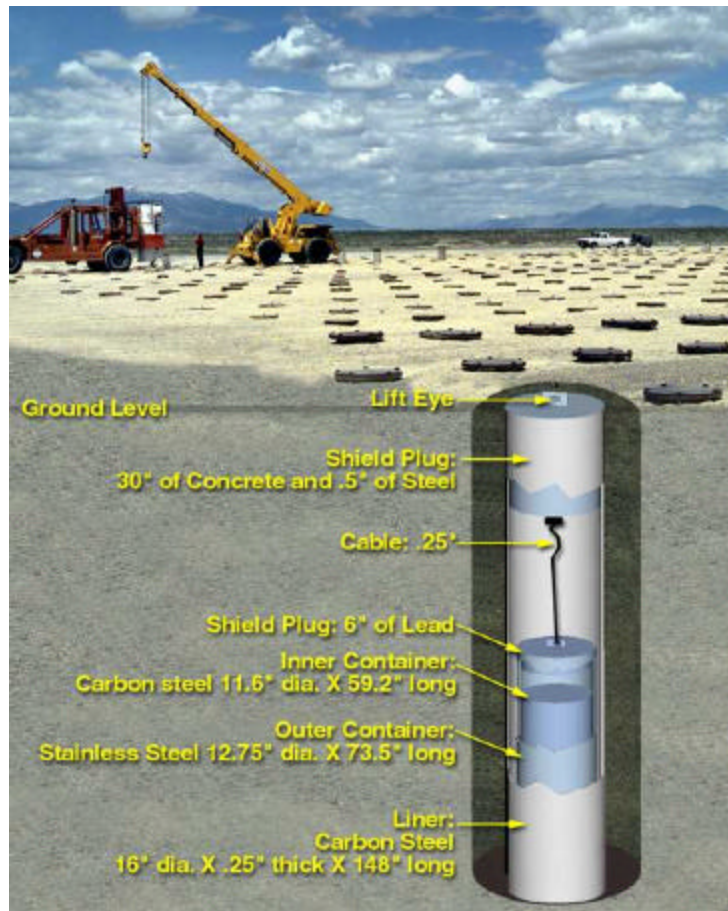
# Options and Alternatives Considered

- ▲ **Several options and alternatives to constructing an operating the RTF at ANL-W have been considered and documented**
- ▲ **Specific studies and assessments**
  - » **Merrick Engineering Study (1995)**
  - » **ANL-W RTF Feasibility Report (2000)**
  - » **Draft Environmental Assessment of the Remote Treatment Facility (2001)**
  - » **Preliminary Draft ANL-W Remote Handled Waste Transportation (2001)**



# Radioactive Scrap and Waste Facility

## RH Wastes/Material



16" Liner With HFEF Scan

### ▲ Characteristics

- » Reactive
- » Ignitable
- » Pyrophoric
- » Toxic (metals)
- » Radioactive (up to 20,000 R/hr)

### ▲ Categories

- » Low and mixed low-level
- » Special case waste
- » TRU and mixed TRU
- » Spent Nuclear Fuel

### ▲ Process Origins

- » Hot cell operation and renovations
- » Reactor operations and renovations

### ▲ Types

- » Debris--process components
- » Solids--sodium and Nak



# Outdoor Radioactive Storage Area RH Waste



Formerly Known as the Radioactive  
Sodium Storage Facility

## Characteristics

- Reactive
- Ignitable
- Pyrophoric
- Toxic (metals)
- Radioactive

## Categories

- Low-level
- Mixed low-level

## Process Origins

- Hot cell operation and renovations
- Reactor operations and renovations

## Types

- Debris--process components
- Solids--sodium and Nak
- Liquids--corrosives